

Tropidia namasiae (Orchidaceae): a new distributional record for India from Manipur^a

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Abstract

Tropidia namasiae C.K.Liao, T.P.Lin & M.S.Tang is reported as a new distributional record to the orchid flora of India from Manipur. Color illustration of the taxon is provided in support of the taxonomic treatment. An artificial key is given for identification of all species of *Tropidia* hitherto reported from India.

Résumé

Tropidia namasiae (Orchidaceae) : première observation en Inde, au Manipur – La présence de *Tropidia namasiae* C.K.Liao, T.P.Lin & M.S.Tang est signalée pour la première fois au Manipur (Inde) et cette observation constitue un ajout à la flore d'orchidées indienne. Une illustration du taxon est fournie en complément du traitement taxinomique. Une clé artificielle d'identification des espèces de *Tropidia* connues à ce jour en Inde est proposée.

Introduction

The genus *Tropidia* Lindley (Orchidaceae), comprises of 32 species (Liao *et al.*, 2013; Govaerts *et al.*, 2015) distributed from northeastern Australia through the South Pacific Islands to India and southeastern Asia, including

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Southern China and Malaysia, and from the Japanese Ryukyu Islands south to Taiwan. It has hitherto been reported in India by five species (De & Hajra, 2001; Misra, 2007; 2012).

During a recent field exploration in the Sadar hills of the Senapati district of Manipur, a small population of *Tropidia* has been located in the Hengbung area. After a critical and comparative study of the live specimens based on available literature (Hooker, 1890; Holttum 1964; Rao, 1989; Lakra *et al.*, 2000; De & Hajra, 2001; Pearce & Cribb, 2002; Kumar & Kumar, 2005; Lucksom, 2007; Yeh *et al.*, 2009; Misra, 2012; Liao *et al.*, 2013; Karthigeyan *et al.*, 2014) and the consultation of local herbaria *viz.* ASSAM, CAL, BSHC, COGCEHR herbarium, Hengbung, and Orchid herbarium Tipi (OHT), Arunachal Pradesh, the specimens were identified as *Tropidia namasiae* Liao *et al.* a species hitherto known to be endemic to Taiwan and critically endangered. Hence the present report of occurrence of *T. namasiae* from Manipur forms a new addition to the orchid flora of India indicating its extended distribution further westwards from Taiwan to NE India and brings the total number of *Tropidia* species known from India to six. The detailed description and colour illustration of the species are given below along with an artificial identification key for all species of *Tropidia* known to occur in India.

Taxonomic description

Tropidia namasiae C.K.Liao, T.P.Lin & M.S.Tang in Novon 22: 426., fig. 1 & 2. 2013.

Types: Taiwan (Republic of China), Kaohsiung city, Namasia district, on Mountain ridge, 23°14'16.2"N; 120°43'41.5"E, 1380 m, C.K.Liao 3594 (Holotype, TAI); T.P. Lin s.n. (Paratype: MO).

Perennial, terrestrial herb ca. 42 cm tall; rhizome short, ascending, with adventitious brown roots ca. 8 cm long and 1-2 mm in diameter; stem woody, cylindrical, 3-4 mm in diameter, branched, green, covered with persistent fibrous sheath at each node; sheaths 1.5-2 cm long, cymbiform, entire, acute; internodes 4.5-6.5 cm long; leaves 2 at the apex, subopposite, plicate, ca. 16 × 4 cm, lanceolate, undulate at base, margin undulate, obtuse-acute, glabrous, 5-7 veined, dark green; petiole sheathing at base, ca. 2.5 cm long; inflorescence a condensed raceme, unbranched, axillary, up to 9 flowered, peduncle 3-5 cm long, glabrous, 3-4 bracteate; floral bracts 3-6 mm long, oblong-lanceolate, acuminate, glabrous, green, persistant;

pedicel with ovary ca. 3 mm long, ridged, green; flowers ca. 6 mm long, crowded, non resupinate, white, partly opening, mealy pubescent and sparsely papillose externally on sepals, petals and ovary; dorsal sepal 3.2×2 mm, elliptic, acute, concave, 3-veined, white; lateral sepals connate all along inner margins to form a synsepal with two short obtuse or sub-acute tips, 3.5×2 mm, cymbiform, broadly oblong, 5-veined; petals ovate-oblong, ca. 3×2 mm, concave, prominently 3-veined, white; lip fleshy, 2.5×2 mm, cymbiform, ovate, obtuse, ridged along its midvein, slightly recurved at apex, weakly undulate, with two sub-marginal horizontal sub triangular lamellae converging at tip; column very short, ca. 1×1 mm, straight; anther cap cordate, ca. 1×0.8 mm, 2-chambered, brown; rostellum minute, bifid; stigma transversally elliptic, shallow; pollinia 2, ca. 1 mm long, obovate, sectile, granular, united to a narrow stipe and elliptic viscidium (Fig.1).

Etymology: the specific epithet refers to Namasia (Kaohsiung, Taiwan), the type locality.

Flowering: May-June.

Habitat: found in shady places of subtropical mixed broad-leaved forest floors at elevation of about 1350 m in association with *Begonia* sp., *Piper* sp. etc.

Distribution: India (Manipur), Taiwan.

Specimen examined: India; Manipur, Senapati district, Hengbung Hills, ca. 1350 m, 06-06-2015, V. Kumar 1653 (COGCEHR).

Note: it may be mentioned that our specimens including two plants in the wild from India show only few numbers of flowers i.e. 7-9 per inflorescence whereas the plants from Taiwan have 20-35 flowers per spike. We are of the opinion that the species delineating characters between *Tropidia namasiae*, *T. angustifolia* C.L.Yeh & C.S.Leou and *T. hegderaoi* Misra are overlapping and a critical molecular study based on fresh material may be required to better clarify the taxonomic status of these entities.

Key to species of *Tropidia* known to occur in India

- | | |
|---|--------------------|
| 1a. Leaves usually 2 per stem..... | 2 |
| 1b. Leaves more than 2 per stem..... | 4 |
| 2a. Flowers large (12-20 mm long); lip with a spur..... | <i>T. angulosa</i> |
| 2b. Flower small (3-6 mm long); lip without spur..... | 3 |

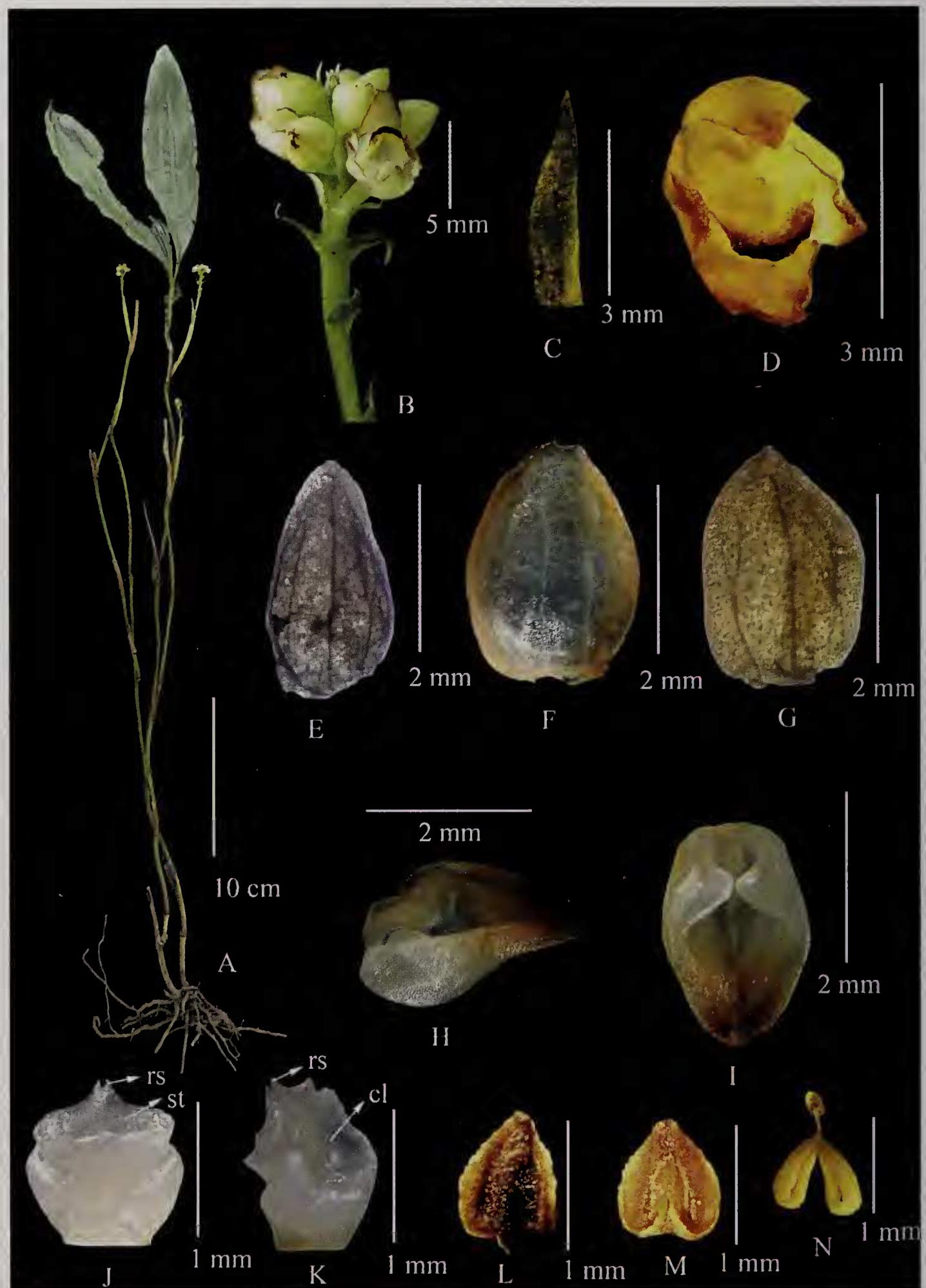


Fig. 1: *Tropidia namasiae* C.K.Liao, T.P.Lin & M.S.Tang

A. Habit; B. Inflorescence; C. Floral bract; D. Flower (front view); E. Dorsal sepal; F. Synsepal; G. Petal; H & I. Lip: lateral and ventral views; J & K. Column: ventral and lateral views (rs: rostellum; st: stigma; cl: clinandrium); L & M. Anther cap: outside and inside views; N. Pollinarium. [V. Kumar 1653 (COGCEHR)]

3a. Inflorescence always lateral.....	<i>T. namasiae</i>
3b. Inflorescence always terminal.....	<i>T. hegderaoi</i>
4a. Leaves plicate; inflorescence axillary.....	<i>T. curculigoides</i>
4b. Leaves conduplicate; inflorescence terminal.....	5
5a. Plants up to 30 cm tall; inflorescence less than 2.5 cm long.....	
.....	<i>T. bambusifolia</i>
5b. Plants more than 30 cm tall; inflorescence more than 2.5 cm long.....	
.....	<i>T. pedunculata</i>

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References

- De, A. & P.K.Hajra, 2001. The genus *Tropidia* Lindl. in India. *The Journal of the Orchid Society of India* 15(1-2): 49-57.
- Govaert, R., P.Bernet, K.Kratochvil, G.Gerlach, G.Carr, P.Alrich, A.M.Pridgeon, J.Pfahl, M.A.Campacci, D.Holland Baptista, H.Tigges, J.Shaw, P.Cribb, A.George, K.Kreuz, J.Wood, 2015. *World Checklist of Orchidaceae*. Facilitated by the Royal Botanic Gardens, Kew. Published on the Internet; <http://apps.kew.org/wcsp/>. Retrieved on 03-08-2015.
- Holtum, R.E., 1964. *Orchids of Malaya, A revised flora of Malaya* Vol. 1 (3rd ed.). Singapore, 759 pp.
- Hooker, J.D., 1890. *The Flora of British India*. Vol. 6. L. Reeve & Co. London, 804 pp.
- Karthigeyan, K., J.Jayanthi, R.Sumathi & J.S.Jalal, 2014. A review of the orchid diversity of Andaman & Nicobar Islands, India. *Richardiana* 15: 9-85.
- Kumar, C.S. & P.C.S.Kumar, 2005. An orchid digest of Manipur, North Eastern India. *Rheedia* 15(1): 1-70.
- Lakra, G.S., M.Tigga & P.V.Sreekumar, 2000. A new record of *Tropidia* Lindl. (Orchidaceae) from Andaman Islands. *Journal of Economic and Taxonomic Botany* 24: 187-189.

- Liao, C.K, T.P.Lin & M.S.Tang, 2013. *Tropidia namasiae*, a new species of orchidaceae (Epidendroideae, Tropidieae) from Southwestern Taiwan. *Novon* 22: 424-427.
- Lucksom, S.Z., 2007. *The orchids of Sikkim and North East Himalaya*. S.Z. Lucksom, Gangtok, Sikkim, 984 pp.
- Misra, S., 2007. *Orchids of India - A glimpse*. Bishen Singh Mahendra Pal Singh, Dehradun, 402 pp.
- Misra, S., 2012. A new species of *Tropidia* (Orchidaceae) from Tamil Nadu, India. *Nelumbo* 54: 13-16.
- Pearce, N.R. & P.J.Cribb, 2002. *Flora of Bhutan, The Orchids of Bhutan*. Vol.3, part 3. Royal Botanical Garden, Edinburgh, 643 pp.
- Rao, A.N., 1989. *Tropidia thwaitesii* Hk.f. (Orchidaceae)- a new record to India. *Journal of the Indian Botanical Society* 68(2-4): 409-410.
- Yeh, C.L., C.S.Leou & C.R.Yeh, 2009. A new species of *Tropidia* (Orchidaceae) from Southern Taiwan. *Taiwania* 54(2): 140-144.

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